Plasmon

Archive Without Compromise™

The Plasmon UDO Archive Appliance

System Upgrade Guide

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PREFACE

Copyright

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Conventions Used

WARNING

A **WARNING** is used to alert the reader to situations or conditions that could potentially result in personal injury, fire hazard, or equipment damage.

CAUTION

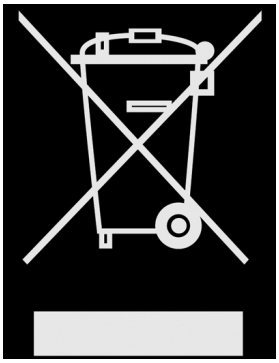
A **CAUTION** is used to warn of undesirable procedures, or of situations in which equipment damage could result.

NOTE

A **NOTE** is used to emphasize an area of text or to provide additional information.

WEEE Compliance

Plasmon products with the Waste Electrical and Electronic Equipment Directive (WEEE) label, shown below, can be shipped back to Plasmon for proper disposal of hazardous components. Please contact Plasmon Technical Support at the locations listed inside the back cover of this manual for the proper procedure.



Product Warranty

This Plasmon® product is warranted free from defects in materials, parts, and workmanship and to conform to the current product specification upon delivery. For the specific details of your warranty, refer to your sales contract or contact the company from which the product was purchased.

The Plasmon quality system is in compliance with and registered to ISO9001:2000. All products are assembled from new or remanufactured parts.

The warranty for the product shall not apply to failures of any unit when:

- The product is repaired by anyone other than Plasmon personnel or approved agent.
- The product is physically abused or is used in a manner that is inconsistent with the operating instructions or product specification defined by Plasmon.
- The product fails because of accident, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, modification, or service by anyone other than the factory service center or its approved agent.
- The product is repaired by anyone, including an approved agent, in a manner that is contrary to the maintenance or installation instructions supplied by Plasmon.
- The Plasmon serial number tag is removed.
- The product is damaged because of improper packaging on return.

CAUTION

Returning the hardware in unauthorized packaging may damage the unit and void the warranty.

If problems with the hardware occur, contact your maintenance organization; do not void the product warranty by allowing untrained or unauthorized personnel to attempt repairs.

WARNING

Untrained personnel operating the hardware may create dangerous situations. This could lead to physical harm to the operator, data loss, and/or disabling of the system.

Please review and observe all safety rules concerning the operation of the product.

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USING THIS GUIDE

This upgrade guide provides information on the update of the Archive Appliance system software to 4.06.19 (or later) and, in addition, describes the use of the UDO2 upgrade tool which prepares the Archive Appliance for upgrade to the use of UDO2 drives and media.

System software updates

Updating to system version 4.xx from version 2.xx represents a significant update to the Archive Appliance system software; including changes to the format of the SATA drives used in the Appliance RAID cache and an update of the Linux kernel version. Therefore, In order to update the Archive Appliance system software from version 2.10.21 or 2.11.07 to 4.06.19 (or later) it is necessary to install an interim disk image prior to installation of the latest system software version.

The table below indicates all the software versions that may be upgraded to 4.06.19 (or later) and that are documented in this upgrade guide.

Current software version	Interim disk image required?	Comments	Page
2.10.21	yes	Foundation controller only	8
2.11.07	yes	Winboard controller only	8
4.03.49	no		22
4.03.49 (Patch Level 1)	no		22
4.06.19 (any patch level)	no		22
4.08.25 (any patch level)	no		22

NOTE

Appliances running 2.10.x must be updated to 2.10.21 and those running 2.11.x must be updated to 2.11.07 before upgrading to 4.06.19 (or later).

NOTE

Appliances featuring a Foundation controller cannot be updated to version 4.11.xx of the system software. An error message will be displayed during the upgrade process if this is attempted.

UDO1 to UDO2 hardware upgrade preparation

The Archive Appliance system software must be updated to at least version 4.06.19 before the UDO2 upgrade can be performed.

CHAPTER 1
UPDATING SYSTEM SOFTWARE

Updating to software version 4.xx

Checking free space required

Prior to updating the system software, a check should be made to ensure sufficient space is available on the system volume to perform the update.

1. To display the amount (in KB) of space available on the system volume, at the Appliance's command-line interface, enter:
   `df -k`
2. Check the available (`avail`) space for the root filesystem (`/dev/.SNAZ_ROOT_VG/.SNAZ_ROOT_LV`). To convert to MB, divide the amount of space displayed in KB by 1024.
3. Refer to the table below for the amount of space required to successfully perform the upgrade:

Current Software version	Available space required to install 4.08.25	Available space required to install 4.11.xx
2.10.21	28 MB	Not supported (see page 6)
2.11.07	28 MB	28 MB
4.xx	225 MB	312 MB

4. If the amount of space required for your system software version is not available, space must be cleared before the update can be performed. Storage space can be made available by clearing log files from the `/var/log` directory. To check if enough space can be cleared, at the command line enter:
   `du -sh`

   The output will list the space in KB used by the files in the `/var/log` directory (to convert to MB divide the amount in KB by 1024). If the command shows that not enough space will be cleared by deleting the log files, contact Plasmon Support.
5. If the `du -sh` command shows that by clearing the `/var/log` directory enough space will be made available to perform the update, The contents of the `/var/log` directory should be archived and moved to an external filesystem, the software update can then be performed.

Updating from 2.10.21 (Foundation controller) 2.11.07 (Winboard controller) only.

The interim software image can be downloaded via FTP (see page 9) or uploaded locally from a CD-ROM (see page 11). If required, a CD-ROM or FTP Server login details can be supplied. Contact Plasmon Technical Support.

CAUTION

Power outage during the System software update should be avoided, as the flash disk may become corrupted. Use of a UPS during System software update is recommended.

NOTE

All users should log out from the Appliance. The software update will stop all services and disconnect all users.

NOTE

Ftp download may take a considerable time, dependent on connection speed.

NOTE

The Appliance system software, drive and library firmware are separate packages. They are all installed in the same way.

NOTE

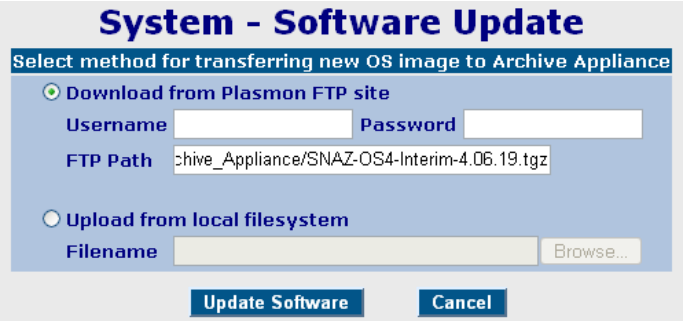
Note should be taken of all the services running on the appliance prior to update. Any services that are not running once the update has been performed should be re-started.

NOTE

Following an update from 2.x to 4.x, locally configured users may not be visible on the web interface. This is purely cosmetic and does not affect the operation of the Archive Appliance. For further information refer to the Archive Appliance Service Manual.

To download the interim disk image via ftp

1. From the GUI, select **Shutdown > Reboot in Maintenance Mode**.
2. Press the **OK** button. Wait approximately 5 minutes for the Appliance to reboot.
3. When the Appliance has rebooted, from the GUI, select **Software Update**.



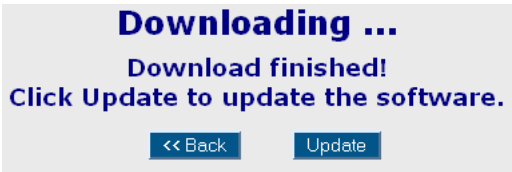
4. Select the **Download from Plasmon FTP site** radio button.
5. Enter the following information:
   - Username - Usually `support`
   - Password - The current support ftp site password
   - Software Image path and File - The path, on the ftp site, to the required software image. e.g. `Archive_Appliance/AA-4.06.19/SNAZ-OS4-Interim-4.06.19.tgz`
6. Click **Update Software**. This will place the interim disk image (a tar ball) on the Appliance hard disk.

The Web interface will indicate that the software is downloading.

NOTE

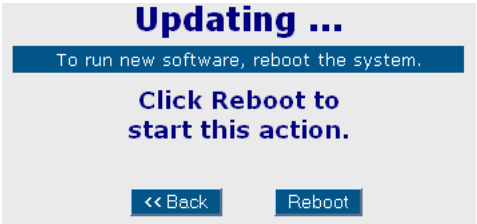
If the download fails or is interrupted, repeat step 4.

7. When the download is finished, click **Update** to update the software.

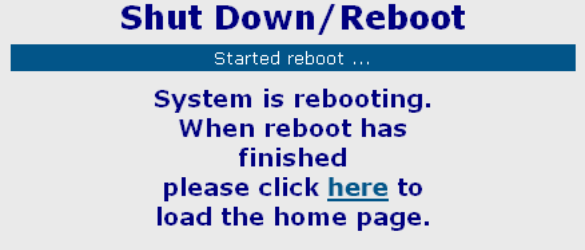


The Web interface will indicate that the software is updating.

8. When the update is finished, click **Reboot**.



9. Click **OK** when the Warning screen is displayed.
10. Wait approximately 5 minutes for the Appliance to reboot. Click the displayed link to load the GUI home page.

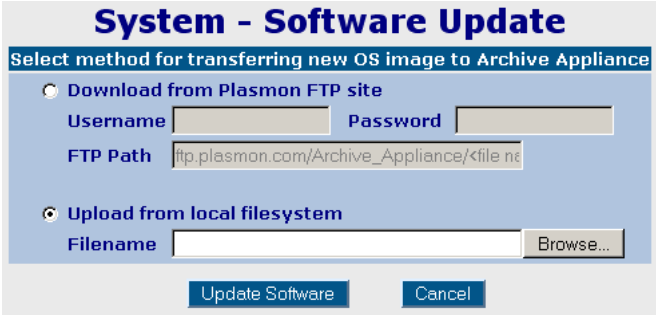


The interim disk image is now installed.

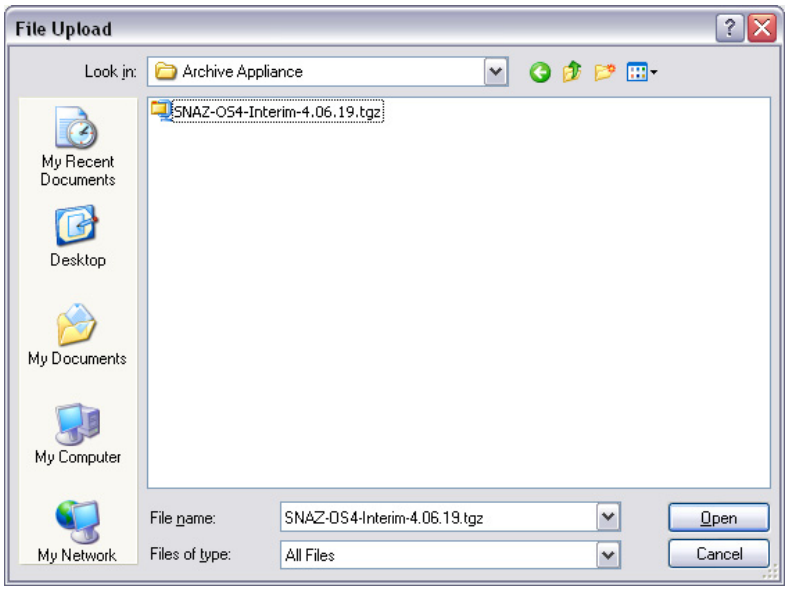
11. Go to page 13 for information on completing the update.

To upload the interim disk image from CD-ROM or local directory

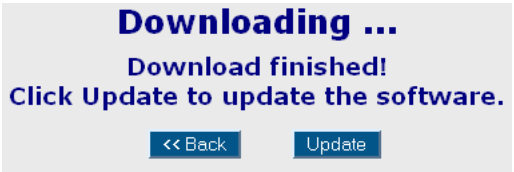
1. From the GUI, select **Shutdown > Reboot in Maintenance Mode**. Wait approximately 5 minutes for the Appliance to reboot.
2. When the Appliance has rebooted, from the GUI, select **Software Update**.



3. Select the **Upload from local filesystem** radio button.
4. Click on **Browse...**.

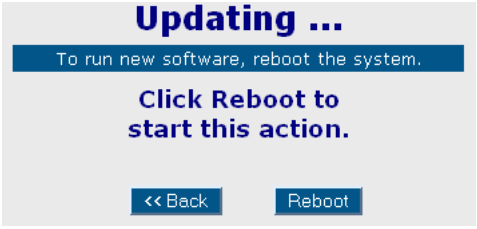


5. Locate the directory containing the interim disk image, select it and click **Open**.
6. When the upload is finished, click **Update software** to update the software.



The Web interface will indicate that the software is updating.

7. When the update is finished, click **Reboot**.



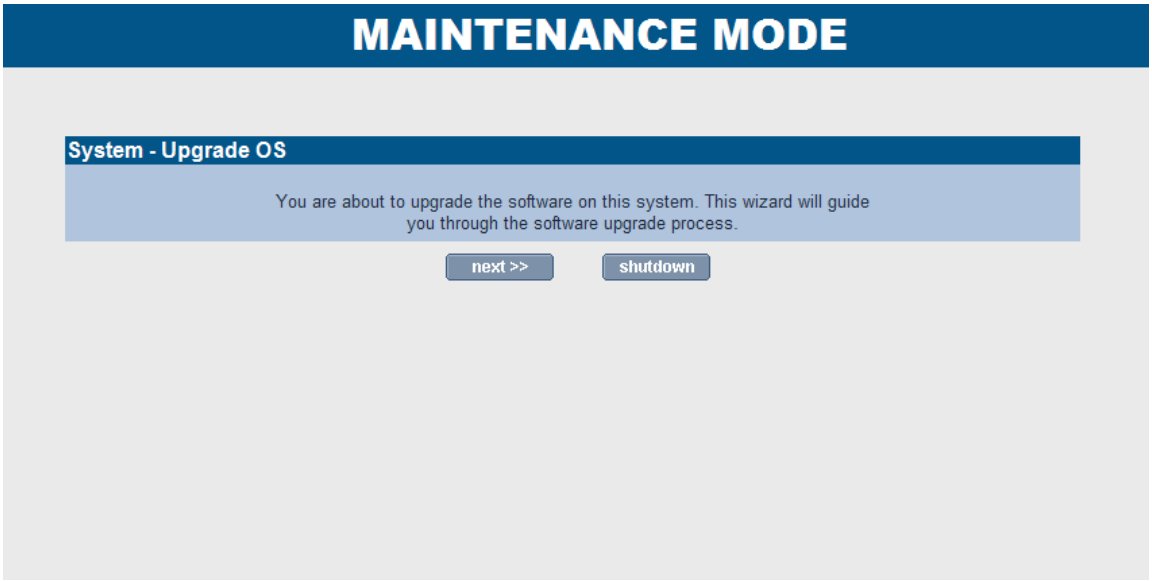
8. Click **OK** when the Warning screen is displayed.
9. Wait approximately 5 minutes for the Appliance to reboot. Click the displayed link to load the GUI home page.

The interim disk image is now installed.

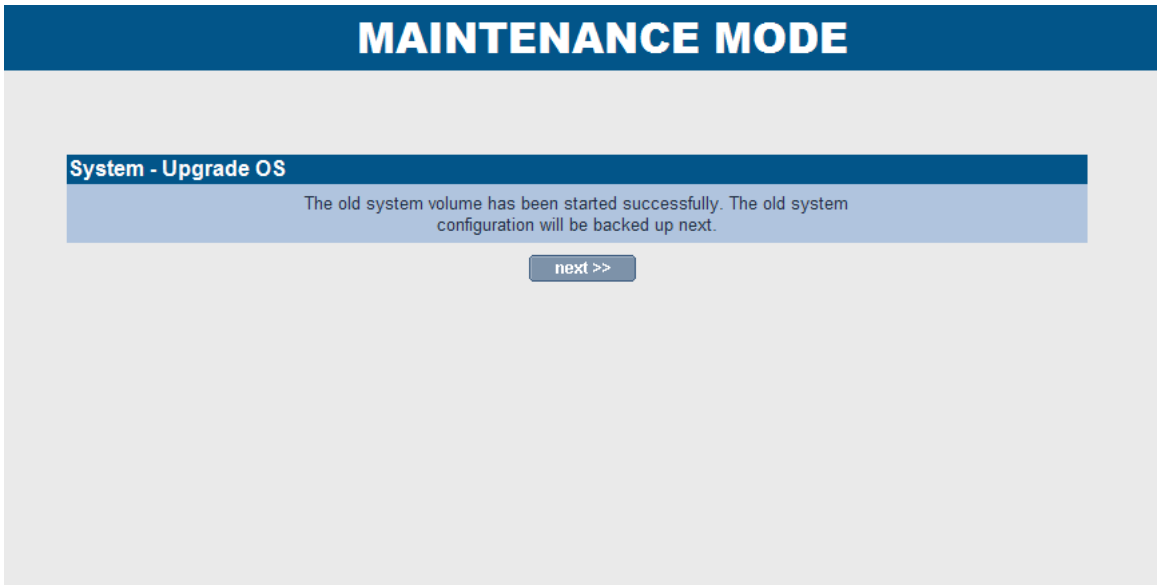
10. Go to page 13 for information on completing the update.

Completing the update

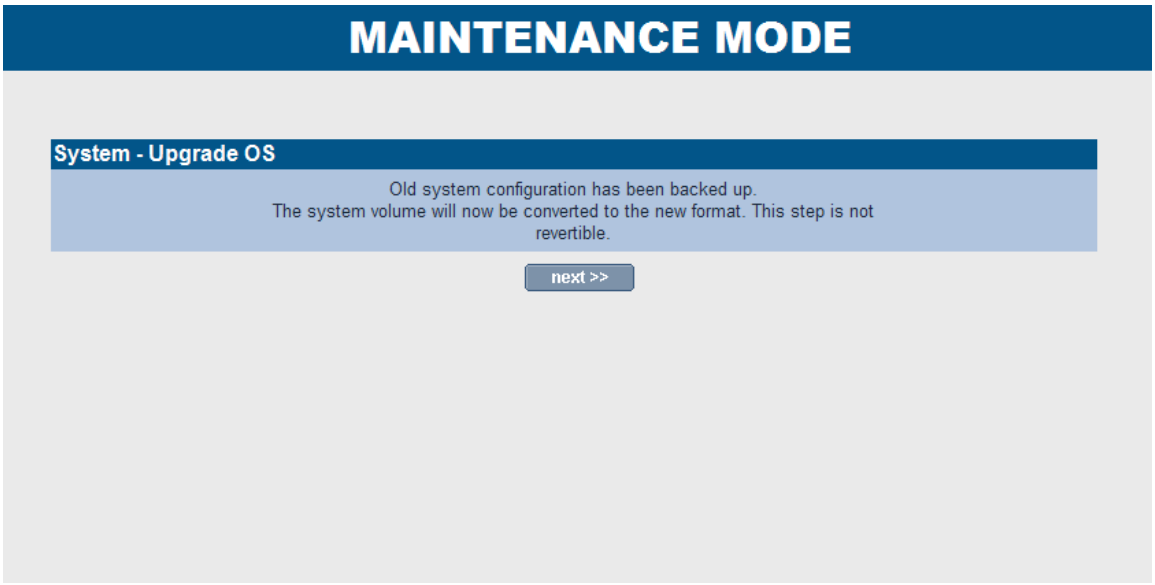
1. Following installation of the interim disk image, the Appliance will reboot into maintenance mode. When reboot is complete (wait approximately 5 minutes for the Appliance to reboot), the web interface indicates that the system software is about to be upgraded, click **Next**.


MAINTENANCE MODE
System - Upgrade OS
You are about to upgrade the software on this system. This wizard will guide you through the software upgrade process.
next >>
shutdown

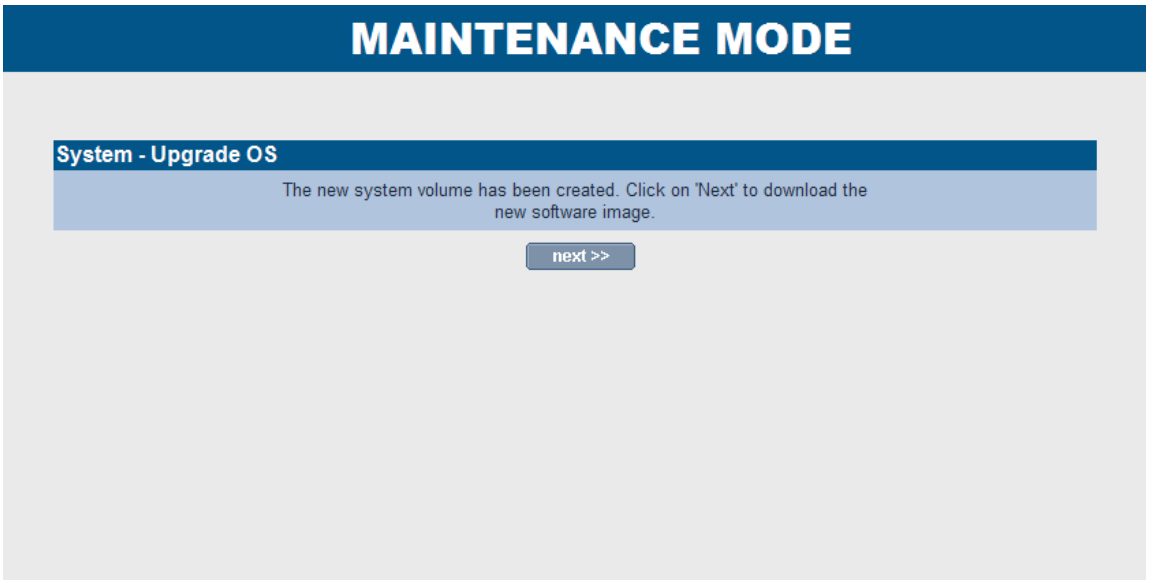
2. The web interface confirms that the old system volume has been started and indicates that the old configuration will be backed up, click **Next**.


MAINTENANCE MODE
System - Upgrade OS
The old system volume has been started successfully. The old system configuration will be backed up next.
next >>

3. The web interface confirms that the old system configuration has been backed up, and indicates that the system volume will be converted to the new format, click **Next**.


MAINTENANCE MODE
System - Upgrade OS
Old system configuration has been backed up.
The system volume will now be converted to the new format. This step is not revertible.
next >>

4. The web interface confirms that the system volume has been successfully converted, and indicates that the new software image will be downloaded, click **Next**.

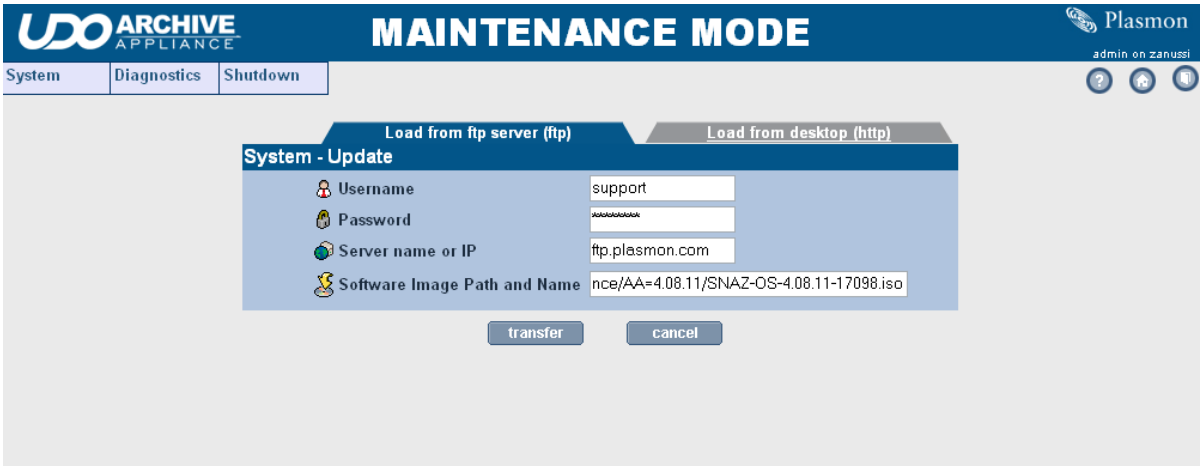

MAINTENANCE MODE
System - Upgrade OS
The new system volume has been created. Click on 'Next' to download the new software image.
next >>

NOTE

The new software image can be downloaded via FTP (see page 16) or uploaded locally from a CD-ROM (see page 17). If required, a CD-ROM or FTP Server login details can be supplied. Contact Plasmon Technical Support.

To load new software image via File transfer (FTP)

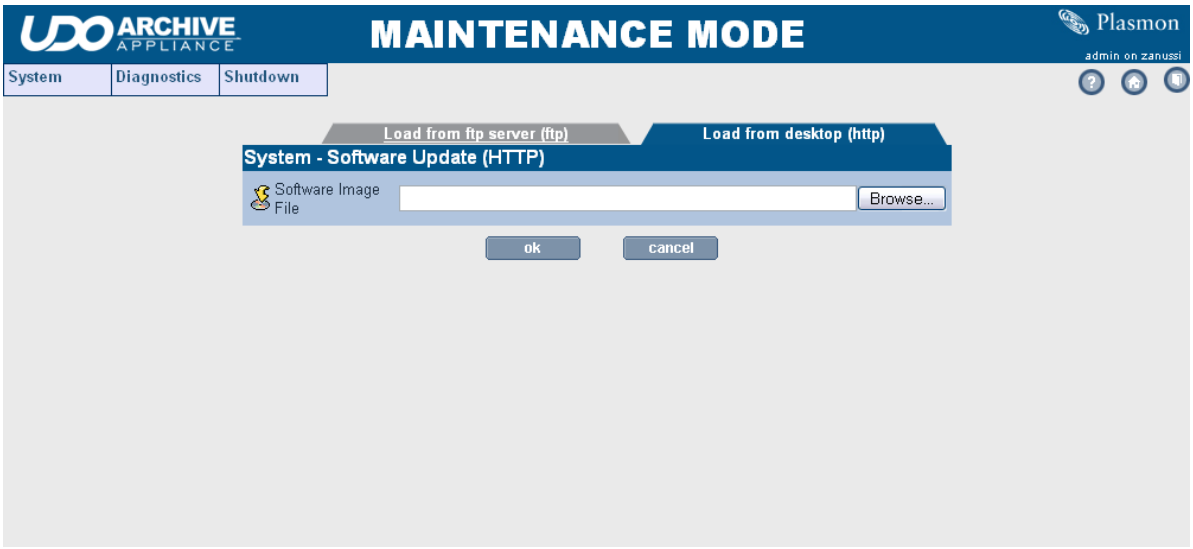
1. Click on the **Load from ftp server (ftp)** tab:



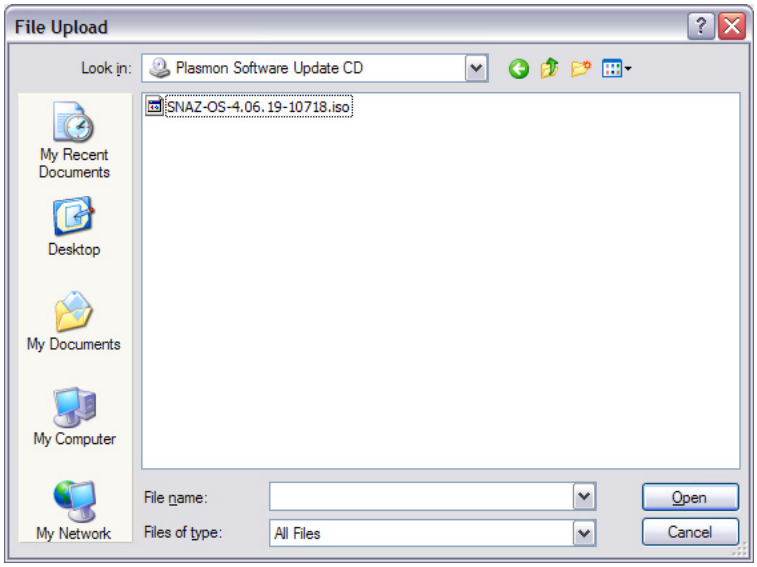
2. Enter the following information:
   - Username - Usually `support`
   - Password - The current support ftp site password
   - Server Name or IP
   - Software Image path and File - The path, on the ftp site, to the required software image.
     e.g. `Archive_Appliance/AA-4.08.11/SNAZ-OS-4.08.11-10718.iso`
3. Click **next** to begin the software download.
4. Go to page 17 for information on completing the update.

To load new software image via Web browser (HTTP)

1. Click on the **Load from desktop (http)** tab.



2. Click on **Browse...**.



3. Click on the software update and then on **Open**.
4. Click **ok** to start the upload.

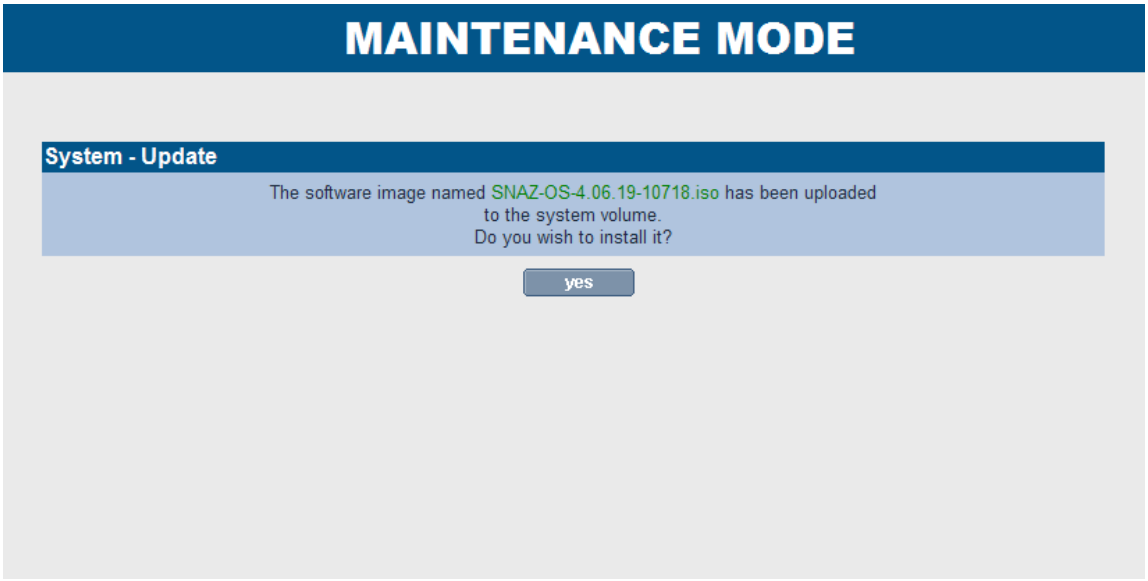
NOTE

The file transfer is controlled entirely by the web browser. There may be no visual indication of transfer progress.

5. Go to page 17 for information on completing the update.

Completing the update

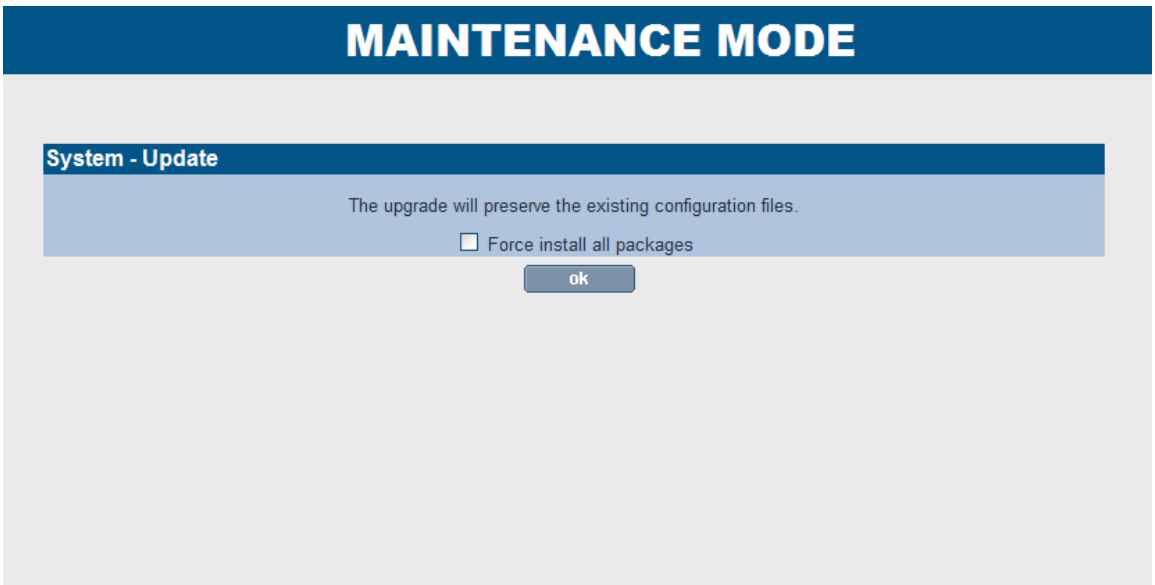
1. The web interface confirms that the image has been loaded and requests confirmation that it be installed, click **yes.**


MAINTENANCE MODE
System - Update
The software image named SNAZ-OS-4.06.19-10718.iso has been uploaded
to the system volume.
Do you wish to install it?
yes

2. The web interface indicates that the existing configuration files will be preserved.

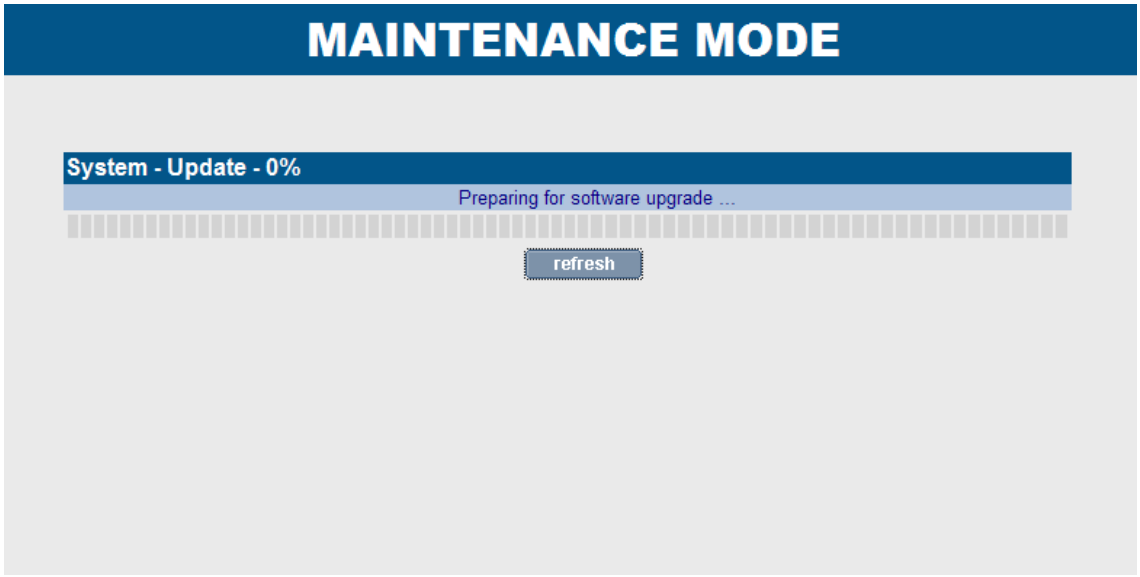
NOTE

By default, the system only installs packages which have changed, however, the "force" checkbox can be ticked to reinstall ALL software packages. The box should not be checked unless specifically advised by Plasmon Technical Support in order to resolve a software installation problem.

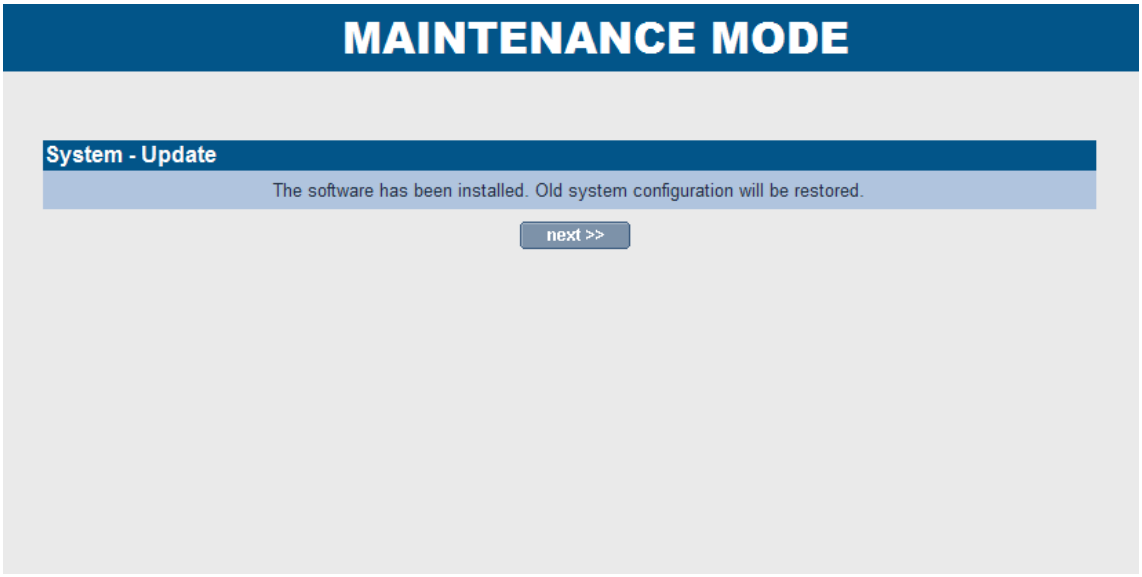


3. click **Next**.

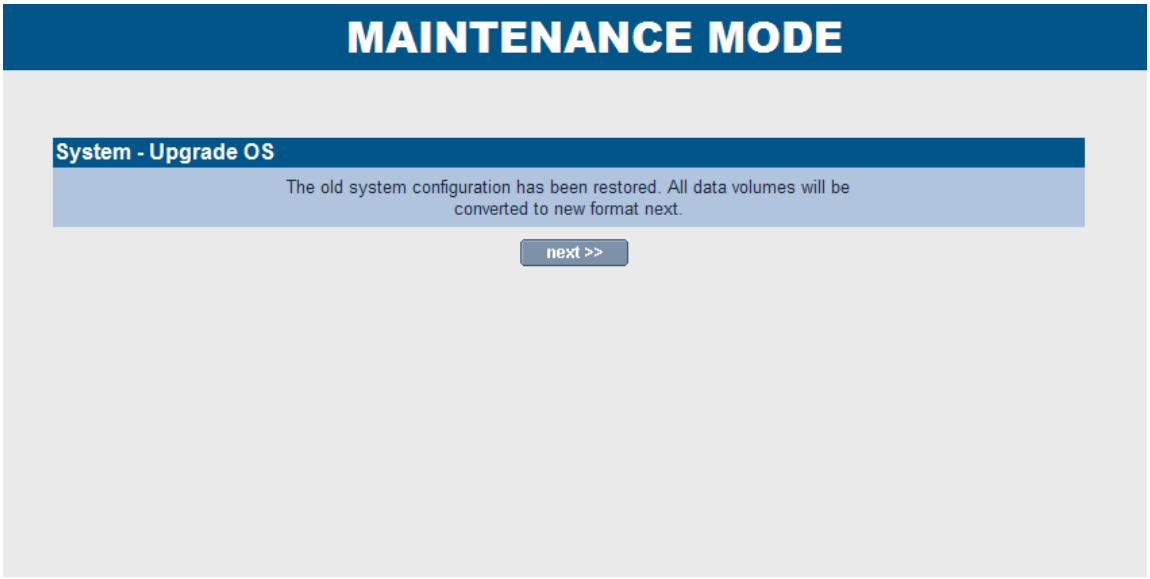
4. The web interface displays a progress screen, click **Refresh** to update the progress bar.



5. Once the update is complete, the web interface confirms that the software image has been installed and indicates that the old system configuration will be restored, click **Next**.



6. The web interface confirms that the old system configuration has been restored and indicates that all data volumes will be converted to the new format, click **Next**.


MAINTENANCE MODE
System - Upgrade OS
The old system configuration has been restored. All data volumes will be converted to new format next.
next >>

7. The web interface confirms that the data volumes have been converted.

NOTE

A warning stating that not all configurations are preserved is displayed in the GUI. This indicates that the update has completed successfully and should not be interpreted as a cause for concern.

8. The Appliance may now be rebooted, click **Reboot**. Wait approximately 5 minutes for the Appliance to reboot.

9. Log in to the GUI. Upload the Appliance personality if required.
10. From the GUI toolbar select **System > Status**.
11. Once the installation is complete the `vpd` file should be checked to ensure that the correct server board type is specified.
12. From the CLI run:
    `cat /boot/vpd`
13. Check that the `server-board` entry accurately reflects the type of controller used in the Appliance.
14. If the controller type stated in the `vpd` does not match the Appliance, the `vpd` should be edited using the `VI` command (refer to the Archive Appliance Service Manual) and the `server-board` entry corrected:

Controller type	vpd server-board entry
Foundation	`Foundation Controller`
Winboard	`Win Controller`

15. To ensure the correct device IDs have been assigned, at the command line enter:

```
ssmautoconfig -f
```

16. The system software update is now complete. Ensure that all required services are running following the update.

NOTE

Following an update from 2.x to 4.x, locally configured users may not be visible on the web interface. This is purely cosmetic and does not affect the operation of the Archive Appliance. For further information refer to the Archive Appliance Service Manual.

Updating from any 4.x release

NOTE

The Appliance system software, drive and library firmware are separate packages. They are all installed in the same way.

The new version of the Appliance system software can be downloaded to the Appliance via FTP or uploaded locally from a CD-ROM. If required to do so, you will be supplied with a user name, password and FTP server details.

CAUTION

There must be no power outage during the System software update, as the flash disk may become corrupted. Use of a UPS during System software update is recommended.

NOTE

You should tell all users to log out from the Appliance, as the software update will stop all services and disconnect all users.

NOTE

Ftp download may take a considerable time, dependent on connection speed.

NOTE

The Appliance system software, drive and library firmware are separate packages. They are all installed in the same way.

NOTE

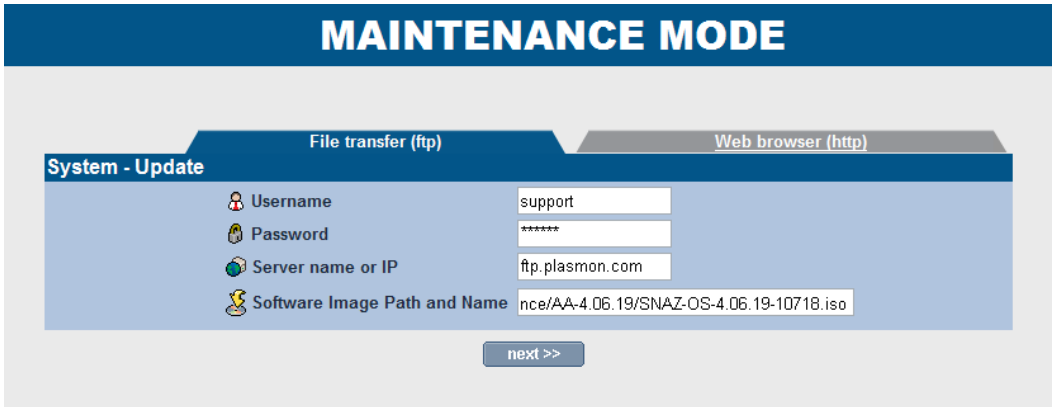
The new software image can be downloaded via FTP (see page 23) or uploaded locally from a CD-ROM (see page 24). If required, a CD-ROM or FTP Server login details can be supplied. Contact Plasmon Technical Support.

NOTE

Note should be taken of all the services running on the appliance prior to update. Any services that are not running once the update has been performed should be re-started.

To update via File transfer (FTP)

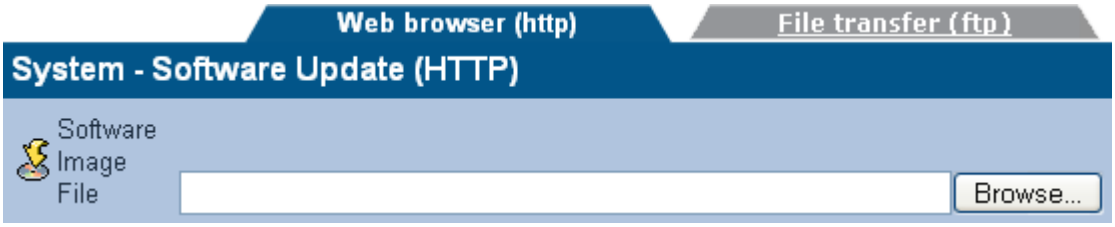
1. From the GUI, select **System > Software Update**.
2. Click on the **File transfer (ftp)** tab:



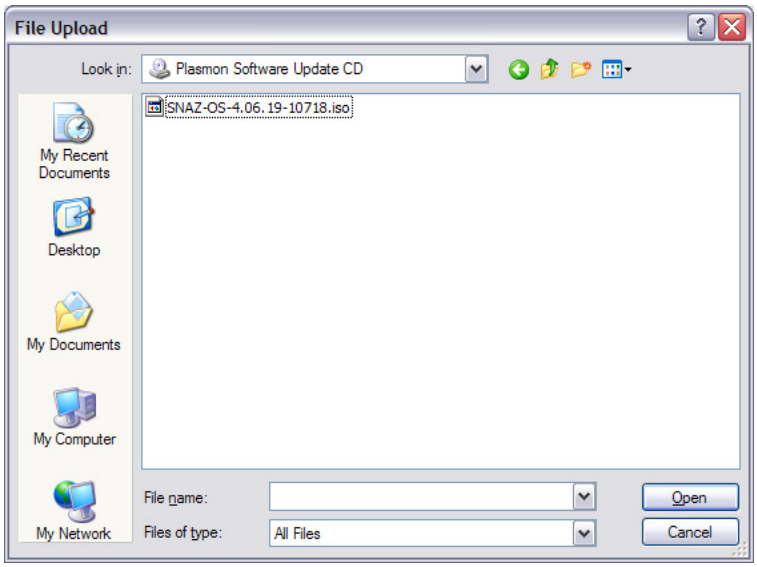
3. Enter the following information:
   - Username - Usually `support`
   - Password - The current support ftp site password
   - Server Name or IP
   - Software Image path and File - The path, on the ftp site, to the required software image.
     e.g. `Archive_Appliance/AA-4.06.19/SNAZ-OS-4.06.19-10718.iso`
4. Click **transfer** to begin loading the software image.
5. Go to page 25 for information on completing the update.

To update via Web browser (HTTP)

1. From the GUI, select **System > Software Update**.



2. Click on **Browse...**.



3. Click on the software update and then on **Open**.
4. Click **transfer** to start the upload.

NOTE

The file transfer is controlled entirely by the web browser. There may be no visual indication of transfer progress.

5. Go to page 25 for information on completing the update.

Completing the update

1. When the software image has loaded successfully, follow the on-screen instructions to complete the installation.

   NOTE

   By default, the system only installs packages which have changed, however, the "force" checkbox can be ticked to reinstall ALL software packages. The box should not be checked unless specifically advised by Plasmon Technical Support in order to resolve a software installation problem.

2. Once the installation is complete the `vpd` file should be checked to ensure that the correct server board type is specified.
3. From the CLI run:
   `cat /boot/vpd`
4. Check that the `server-board` entry accurately reflects the type of controller used in the Appliance.
5. If the controller type stated in the `vpd` does not match the Appliance, the `vpd` should be edited using the `VI` command (refer to the Archive Appliance Service Manual) and the `server-board` entry corrected:

Controller type	vpd server-board entry
Foundation	`Foundation Controller`
Winboard	`Win Controller`
Super Micro	`Supermicro PDSM4`

6. To ensure the correct device IDs have been assigned, at the command line enter:

   `ssmautoconfig -f`

The system software update is now complete. Ensure all required services are running following the update.

CHAPTER 2
UPGRADING UDO1 TO UDO2

This chapter describes the use of the UDO2 upgrade software tool, which is provided to prepare the Archive Appliance to be upgraded from UDO1 to UDO2 optical drives.

Writing of data to UDO1 media using UDO2 drives is not supported. Therefore, prior to replacing the drives, any open UDO1 media must be closed and any failed or spare UDO1 media removed from the Appliance. The UDO2 upgrade tool is provided to automate this process.

NOTE

The Archive Appliance system software must be updated to at least version 4.06.19 before the UDO2 upgrade tool can be used.

NOTE

The term "unreliable" in this text refers to media which has suffered read/write errors during normal use but still contains readable user data. The term "failed" refers to media which has failed to initialize and therefore contains no user data.

Using the UDO2 upgrade tool

Prior to using the upgrade tool, any unreliable media should be cleaned or replaced in accordance with the instructions provided in the Archive Appliance Administrator's Guide.

1. Log in to the command line interface (CLI) using a Secure Shell (SSH) client such as PuTTY as described in the Archive Appliance Service Manual.
2. From the CLI, run:
   `/opt/ssm/sbin/tools/ssm_scsi <`*library SCSI id*`> --preventremoval no`

   NOTE

   The library SCSI ID for an Appliance with a Foundation controller is: id:1:0:6:0. The library SCSI ID for an Appliance using a Winboard controller is: id:2:0:6:0.
3. From the CLI run:
   `close-udo-1`
4. Prior to closing any open UDO1 media, the Appliance will attempt to eject all failed and unused media from the Appliance.

5. The Appliance will indicate if failed media exists and request confirmation that it be ejected:

   ```
   AA has failed media.
   List of failed media: AAAAAR53, AAAAAH85, AAAAAI96
   Eject all failed media ? (Y/N):
   ```

   enter: `Y`

6. Failed UDO1 media is ejected sequentially via the mailslot and must be manually removed.

7. The Appliance will indicate if unused (blank) media exists and request confirmation that it be ejected

   ```
   AA has blank media.
   List of blank media: AAAAAF47, AAAAAB91, AAAAM16
   Eject all blank media ? (Y/N):
   ```

   enter: `Y`

8. Unused UDO1 media is ejected sequentially via the mailslot and must be manually removed.

9. The upgrade tool will proceed to close all open UDO1 media.

   NOTE

   Under normal operation, the UDO2 upgrade tool closes all open media by writing the FRI information to the media and marking the media as closed in the RMDB. The tool also features a `--force` option to enable media to be closed even if there are no functional UDO1 drives in the Appliance. The `--force` option marks all open media in the RMDB as closed without writing FRI data to the media.

10. The upgrade tool will indicate if any media fails to close. Unreliable media must be cleaned using a UDO cleaning kit, or replaced in accordance with the instructions provided in the Archive Appliance Administrator's Guide.

    NOTE

    To remove dirty or unreliable media for cleaning, select **Remove dirty disk** from the Appliance keypad interface **Service** Menu.

11. Once unreliable media has been cleaned or replaced, run the UDO2 upgrade tool again.

12. If the media fails again, run the UDO2 upgrade tool once more, using the `--force` option described above.

13. Once all media is closed, the UDO2 upgrade tool will perform a backup.

14. Once the backup has been performed, the backup media will be ejected.

15. The Appliance can now be powered down and the UDO1 drives replaced. Refer to the Appliance's hardware upgrade documentation for the correct procedure:

Publication Number	Appliance Library type	Procedure
820-102770-00	Gx Series	Single drive to upgrade to UDO2
820-102771-00	Gx Series	Dual drive to upgrade to UDO2
820-102772-00	Enterprise G	Installation of UDO2 drive module

16. Once the hardware upgrade has been completed, power up the Appliance. At the CLI enter:

```
ssmautoconfig -f
```

17. Reboot (wait approximately 5 minutes for the Appliance to reboot). The Appliance should now recognize the new drives.
18. Add the UDO2 data and backup media via the Keypad interface or by following the direct slot loading procedure detailed in the *Archive Appliance Administration Guide*.
19. Run a backup from the GUI **Data Protection > Backup** page.
20. Run the self-tests from the GUI **Diagnostics > Self Tests** page.

CONTACTING PLASMON

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Before Placing a Call to Plasmon

- Run Self Test from the GUI
- Verify system configuration

Placing a Call

Please have the following information available when calling:

- Serial number
- Description of failure
  - Sequence of events leading to failure
  - Actions taken so far to solve problem, and outcomes of actions
- System information
  - Software version number
  - Logs pulled and ready to send